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| 10/761,260 | 01/22/2004 | Tzung-Hung Kang | 3722-0175P | 2567 |
| 2292 | 7590 | 02/24/2005 | EXAMINER | |
| BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747 | | | ENGLUND, TERRY LEE | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2816 | |

DATE MAILED: 02/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/761,260

Applicant(s)

KANG, TZUNG-HUNG

Examiner

Terry L. Englund

Art Unit

2816

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 January 2004.
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☒ Claim(s) 1-4 and 9 is/are allowed.
6) ☒ Claim(s) 10-18 is/are rejected.
7) ☒ Claim(s) 5-8 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 22 January 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: "V_{RC}" is not shown in Fig. 1, although it is cited at least eight times on pages 1-2. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: "312" of Fig. 5 is not described, but since it apparently identifies the feedback line within ring oscillator 31, it is suggested "312" be removed from the figure. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to

avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The drawings are objected to because oscillator 31 is shown with an even number of inverters instead of odd (as cited on page 5, line 19), therefore it will not operate properly. The "Reset" waveform shown in each of Figs. 2, 4 and 6 is not believed to be accurate, and therefore is misleading. For example, how can it be high initially even if power supply VDD is low? Is the comparator powered by a dedicated power supply that is independent of VDD? Corrected drawing sheets in compliance with 37 CFR 1.121(d), or clarification, are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet"

pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The disclosure is objected to because of the following informality: It is believed that "FIG. 3" on line 5 of page 9 should actually be --FIG. 5-- since Fig. 3 is the prior art circuit. An appropriate correction is required.

Claim Objections

Claims 5-8, and 17 are objected to because of the following informalities: Claim 5, line 7 "a first terminal" should be --the first terminal-- to correspond to the capacitor's "a first terminal" cited on line 4 of the same claim. Claims 6-8 carry over the objection from claim 5. To minimize possible confusion with respect to which voltage "the voltage" on line 2 of claim 17 refers to, it is suggested --of the power source- be added after "the voltage", thus clearly distinguishing claim 17's "the voltage" from the first/second output voltages that are also recited within claim 16. Appropriate corrections are required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 16-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention. It is not clear how all of the various steps recited within claim 16 relate to the oscillator, frequency detector, and comparator recited within the preamble. For example, it

is understood the comparator can compare the first/second output voltages, and generate the comparing signal, but what outputs the reset signal according to the comparing signal? Using the applicant's own Fig. 5 as a reference, the comparing signal and reset signal correspond to the single "Reset" signal. Therefore, does claim 16's "outputting a reset signal" step imply another signal and/or component within the power-on reset circuit, or does it actually refer back to the comparing signal and/or comparator? The "corresponding oscillation signal according to" and the "corresponding first output voltage according to" phrases in claim 16 (i.e. on lines 5 and 7, respectively) are considered vague because signals and voltages can correspond to each other in various ways. For example, as long as there is a power source voltage applied to an oscillator, its signal will effectively correspond to the voltage in at least one way (e.g. the oscillation signal's voltage swing will have a narrower range with a low power source voltage, and a wider range with a higher power source voltage). If some circuit receives an oscillation signal and provides an output signal, the output signal can have a corresponding voltage such as when the input signal's voltage is high, the output signal's voltage could be low). Since claim 17 does not end with a period, it is not understood if all the intended limitations have been recited.

Claim 10 recites the limitation "the reset signal output circuit" in lines 1-2 with insufficient antecedent basis for this limitation in the claim, or its chain of dependency. Was --the reset signal generator-- meant, or does this "output circuit" relate to something else?

Similar to claim 10 above, claim 15 recites the limitation "the reset signal output circuit" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

Dependent claims carry over any rejection(s) from any claim(s) upon which they depend.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

In so far as being understood, claim 16 is rejected under 35 U.S.C. 102(b) as being anticipated by Ikoma et al. (Ikoma). Figs. 5-6D show a circuit and related waveforms one of ordinary skill in the art can relate to a power-on reset method applied to a power-on reset circuit. The circuit, shown in Fig. 5, comprises oscillator 40, 11 can be deemed a frequency detector because it receives clock signal CK from oscillator 40, and comparator 12. Monitor 10 receives power source voltage Vdd; oscillator 40 provides oscillation signal CK according to Vdd (e.g. see Figs. 6A and 6C); 11 effectively outputs first output voltage Vref according to oscillation signal CK (e.g. see column 4, lines 21-24); 12 compares first output voltage Vref with second output voltage Vdet, and generates comparing signal S; and comparing signal S can be considered an output reset signal (e.g. see Fig. 6B). Since Ikoma discloses that second output voltage Vdet is proportional to voltage Vdd (see column 2, lines 33-36), claim 16 is anticipated.

Allowable Subject Matter

Claims 1-4, and 9 are allowed. There is no motivation to modify or combine any prior art references to ensure the power-on reset circuit comprises the oscillator and frequency detector as recited within independent claim 1, upon which claims 2-4, and 9 depend.

Claims 5-8 would be allowable once claim 5's objection is addressed/corrected. These claims also depend on claim 1.

Also, claims 10-15 and 17-18 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims. Claim 10, which depends on allowed claim 1, has a 112 related rejection, and claims 11-14 carry over that rejection. Claim 15, which also depends on allowed claim 1, has its own 112 related rejection. Claims 17-18 carry over rejections from claim 16, plus claim 17 has its own 112 related rejection. With respect to claims 17-18, there is no strong motivation to modify or combine any prior art reference(s) to ensure the oscillation signal's frequency increases as the power source voltage increases as recited in claim 17; or having the first output voltage inversely proportional with the oscillation signal frequency as recited within claim 18.

Prior Art

The other two prior art references cited on the accompanying PTO-892 are deemed relevant to at least sections of the claimed invention. Both Kim and Gupta et al. show power-on reset type circuits each utilizing some type of an oscillator. Fig. 6 of Kim shows oscillator 10 providing a signal to detector 20, and reset signal generator 30 for generating reset signal POR according to a first output voltage from detector 20. However, the reference does not disclose the oscillation signal's frequency increasing as the power source voltage increase. Even if Fig. 7A's waveform is accurate, it shows a higher frequency at low voltages, and a slower frequency at the higher power source voltage. Also, detector 20 would not normally be considered a frequency detector for providing an output voltage, and the reference does not clearly show/disclose (a comparator for) comparing of first/second output voltages. Gupta's Fig. 3 shows oscillator 101 providing signal B to detector 102, which provides first output voltage RST to

reset signal generator 103, which in turn generates a reset signal (e.g. RESET and RESETM). As shown in Fig 5, the frequency of oscillation signal B effectively increases with an increase of power source voltage VCC. However, this reference does not clearly show/disclose a frequency detector, or a comparator for comparing first/second output voltages.

Any inquiry concerning this communication from the examiner should be directed to Terry L. Englund whose telephone number is (571) 272-1743. The examiner can normally be reached Monday-Friday from 7 AM to 3 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Callahan, can be reached on (571) 272-1740.

The new central official fax number is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-1562.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

THE

Terry L. Englund

17 February 2005



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